

ABSTRACT

A new family of multifunctional smart coatings based on of stabilized diamond-like metal-carbon atomic scale composites and diamond-like atomic-scale composite (DL ASC) materials.

- 5 Based on a unique combination of the coating fine structure, properties of the coating/substrate interface, and the mechanical and electrical properties of the coating, the disclosed smart coatings would integrate various high resolution sensors and interconnections, and the sensor would diagnose dangerous stress distribution in the coated subject with no distortion in real time, while these diamond-like coatings would simultaneously provide environmental protection of the
- 10 coated surface and improve its aerodynamic quality.